

**REMARKS**

Applicants respectfully request reconsideration of the present application in view of the reasons that follow.

***Drawings***

The drawings are objected to under 37 CFR 1.83(a) on the basis that the drawings must show every feature of the invention specified in the claims. In this objection, the Office Action specifically cites, the “object” as recited in claims 36 and 42, noting that the drawings do not show any object being measured.

Applicants traverse this objection on the grounds that claims 36 and 42 are both method claims and therefore are reciting method steps. There is no requirement to have a figure pictorially illustrating each step in a method. Therefore, the application is not required to have a figure showing an object being measured, as asserted by the Office Action.

***Claim Rejections Under 35 U.S.C. § 103***

Claims 24-26, 36, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over White (U.S. 5,893,054) in view of Sonnichsen et al. (U.S. 6,456,945) and further in view of Applicants’ disclosure on page 12, lines 9-17. Applicants respectfully traverse this rejection.

Applicants’ remarks below assume that the first line of page 4 of the Office Action contains a typographical error in that “Birgenheier et al” that should read “ White”. Furthermore, Applicants assume that the frequent references to “Connichsen et al.” in the Office Action on pages 4 and 5 are meant to refer to “Sonnichsen et al.”

The White reference is directed toward providing an automated gain control in digital signal processing related to a quartz angular-rate sensor or solid-state gyroscope, see column 1,

lines 9-12. As described in the summary at column 2, beginning at line 32, the objective of White is to provide an automatic gain control for a sparsely-sampled sinusoid.

At column 6, beginning at line 13, White notes that his patent “concerns signal processing for the quartz angular-rate sensor 61, 62 and 63.” White differentiates quartz angular-rate sensors 61, 62, and 63 from vibrating quartz accelerometers 64, 65, and 66, noting that they operate entirely independently. White continues, noting that “the vibrating quartz accelerometers 64, 65, 66 are not pertinent to the present invention and will not be described in any further detail.” See col. 6, lines 13-19. Therefore, Applicants submit that it appears that the assertions in the Office Action regarding signal processing from a vibratory accelerometer in White do not involve vibratory accelerometers, but instead are directed to the quartz angular-rate sensors, which White explicitly distinguishes from vibratory accelerometers, as noted above. In view of the above, Applicants submit that White is insufficient to sustain a rejection of the pending claims reciting a vibratory accelerometer.

Furthermore, Applicants submit that the Examiner’s assertion that it would have been obvious to one in skilled in art to modify White by inserting a phase computation device taught by Sonnichsen to compute the phase of the digital signal in order to provide proper indication of direction of a vibrating signal so as to adjust a system parameter [sic] so as to counteract the effect of such vibration, is not supported by White or Sonnichsen et al.

As in the prior Office Action, the Examiner appears to be attempting to combine two references which one of ordinary skill in art would not be motivated to combine. Specifically, White is directed toward providing an automated gain control in digital signal processing related to a quartz angular-rate sensor or solid-state gyroscope. Sonnichsen et al., on the other hand, is directed to detecting anomalies in rotating components. As described in the Abstract, Sonnichsen et al. discloses a method for detecting an anomaly, such as a crack, in a rotor. The method includes measuring the rotational speed and vibration of the rotor. The phase and amplitude of the vibration difference signal are measured and evaluated to determine whether an anomaly has developed. The apparatus includes vibration and speed sensors coupled to a filter

for extracting a signal from the vibration measurement. Applicants assert that the Office Action does not establish why one who is skilled in art would be motivated to combine these two references.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any additional extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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